

**Shelby County Tennessee**

**Proposal for Acceleration of the  
Development of a Long Term Information  
Technology Plan for Shelby County**

Prepared by:

**Sparks Bureau of Business & Economic Research**

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**Mission Statement of  
Applied Information Technology Center within the Sparks Bureau of Business and  
Economic Research**

*To leverage multi-disciplinary expertise from the worlds of  
business, technology, and academia to benefit governmental  
and commercial organizations through improved targeting of  
Information Technology expenditures to deliver cost-effective,  
sustainable solutions to real operational issues.*

# Introduction and Overview

## Background and Purpose

This proposal builds on previous and current engagements of the AITC including the IT “In-Sourcing” Initiative Study of August 2005 and the current ongoing staffing of the Technology Coordination Office (TCO), and outlines ways in which the Applied Information Technology Center can assist the County to develop its plans to move towards Enterprise-level planning and deployment of Information Technology.

**In particular, the aim is to accelerate the development of the County’s long-term Information Technology plan which will concentrate on the reduction of costs and improvement of efficiency. The plan will utilize an enterprise-focused IT approach which offers standardized, secure, scalable and cost-effective technology platforms providing a data infrastructure, enterprise applications, and Internet/eGovernment solutions. The current FY2009 TCO contract includes \$50,000 to support the initial development of a long -term information technology plan. At the existing funding level, the plan will not be totally completed for 24 months.**

**Incremental funding of \$150,000 will enable additional resources to be dedicated to the development of the County’s long term Information Technology Plan, which will be developed in two phases. The first phase, with a target delivery date of March 2009, will develop a proposal for a new Management/Organizational structure for the County Information Technology function as well as a revised voice and data network infrastructure to support all areas of Shelby County government. The second phase, with a target delivery date of October 2009, will provide a plan to address the issues of application and data architecture, Internet architecture, security architecture, and platform and software standards. (the outline of the plan is included at the end of this document).**

**The proposed incremental funding is in addition to the \$50,000 for IT planning support already approved in the FY2009 TCO contract. The additional funding, (and the accelerated timing of the delivery of the planning phases), also assumes the TCO will be funded in FY 2010 at the FY2009 level, including the embedded \$50,000 for IT planning support.**

The potential for this engagement is covered as an optional service that can be provided under the current contract with Shelby County under which the AITC provides staffing for the TCO.

## Introduction to the AITC

The Applied Information Technology Center at the University of Memphis’ Sparks Bureau of Business & Economic Research is an organization of senior-level IT experts, with extensive experience in the public and/or private sectors. They offer the experience and skill sets for engaging in the assessment and analysis of the complete spectrum of applied information technology and business issues relative to cost, efficiency, implementation strategy, and security. Its principal members each individually have a minimum of twenty years of applied information technology and project implementation experience and collectively have experience in all areas of information technology development, implementation, and on-going operations.

In today’s economy, there are two inescapable truths: information technology is fundamental to every element of an organization’s operation, and the cost-benefit of those systems has a tendency to spiral out of control. The remit of the AITC is to redress that balance, by focusing our pool of executive-level, experienced and highly-skilled technologists on identifying, validating, and facilitating the implementation of appropriate, manageable and cost-effective technology solutions.

## Design and implementation philosophy

The AITC's approach to technology projects is to apply some fundamental best practice principles in order to deliver solutions which are as focused, timely, and cost-effective as possible:

- **Effective scope definition and enforcement:** it is important to ensure that the proposed project does not become unwieldy through the introduction of numerous tangential objectives and functions which do not effectively support the core objective.
- **Scalable, Flexible, Secure:** the systems and software implemented need to be able to support the triple objectives of confidentiality, integrity and availability, while having the capability to be expanded in terms of capacity and functionality over time as business requirements change.
- **Phased approach:** in order to contain scope effectively, make meaningful interim deliverables, and leverage scalable architectures, we often look to break overall requirements down into multiple phases which allow significant benefits to be realized as quickly as possible, and more refined or complex functionality added in subsequent phases.
- **Open standards, open source:** wherever practical, the AITC strongly endorses adherence to non-proprietary 'Open Standards' for information systems as offering maximum opportunity for long-term, flexible interoperability of hardware, software and data. Furthermore, we recognize the benefits of appropriately-licensed, patent-unencumbered Open Source software as a cost-effective, secure, and generally widely-understood computing environment. Although not always appropriate for all applications and environments, we believe that when compared to proprietary software, the Open Source model can often provide a more easily maintained environment with lower acquisition costs, arguably comparable or lower maintenance costs, and relative ease of finding experienced support staff.

## Outline of Proposal

Specifically, we propose a twelve-month modular framework to investigate many of the major IT-related issues and challenges facing the County, consisting of two primary phases, each of which is broken into sub-project modules.

**Phase I – the first six months of the accelerated proposal – is composed of a high-level phase developing management and organizational structures in support of the Information Technology function throughout all areas of Shelby County government and developing detailed recommendations for a common network infrastructure in support of information technology.** Phase I also provides the basis for the more focused work in Phase II.

**In the second six months of the accelerated engagement, Phase II looks at application and data architecture, Internet architecture, security architecture, and platform and software standards and key decision points and deadlines along the way.**

### Phase I – Organization and Network Architecture

Phase I is centered around establishing an IT management framework within Shelby County and developing a plan for implementing a common network infrastructure. *This plan will propose a management and governance structure to support the foreseeable needs and trends that will emerge in the coming years, and then establishing a flexible, long-term strategy for support of key infrastructure areas of technology.* This will involve close consultation with the various elected officials' teams – both from operational and technical standpoints, in order to drive towards a consensus on how best to structure an over-arching technology management framework for County Government as a whole.

- **IT Management Framework:** Establish a framework for how best to consolidate and govern several county organizations already involved with application programming, infrastructure, data center operations, telecommunications, Geographic Information Systems (GIS), mapping and technical training, systems security, e-government, Internet, and technology planning and administration. It will provide suggested processes for establishing funding priorities for technology projects based on changes in social and economic paradigms and state mandates that must be fulfilled.
- **Network Architecture:** Develop a long range infrastructure plan including recommendations regarding local- and wide-area voice and data communications and the various topologies, transmission services and protocols necessary to facilitate the interconnection of server platforms, intra-building and office networks (LANS), and inter-building and campus networks (WANS). This is a critical component since the County's voice and data networks continue to grow in terms of cost, sophistication, and increased demand for utilization. A technical and organizational framework proposal for effectively monitoring and supporting this infrastructure will also be developed.

### Phase II – Applications and Data Architecture, Internet and Security Architecture Including Platform and Software Standards

Phase II is focused on different functional areas which appear to face long-run challenges in terms of cost, supportability and/or effectiveness by identifying the long-run needs in those areas, and laying out alternatives for the long-run upgrade and/or maintenance of each. The aim of this Phase is to put in place a practical roadmap which ensures that the County is able to continue to leverage technology cost-effectively to deliver vital services both internally and to County taxpayers, even in the face of significant challenges and unknowns facing several critical, complex systems, and most importantly that the County can transition into these long-term solutions affordably, and with minimum disruption. The deliverables include recommendations on the support of and standards for server, desktop, mobile devices, and the technical and organizational framework for effectively monitoring and supporting the infrastructure. A plan will be developed to cost-effectively secure the County's numerous data repositories and

networks, while maximizing the potential cost savings and efficiency gains from Internet technologies such as online self-service eGovernment applications, document management systems, email, and mobile devices

The outline of this Phase follows:

- **Applications and Data Architecture:** *Recommendation of cost effective development technologies and database platforms for Shelby County.* Application architecture provides common development and presentation standards, enables optimum system integration, provides shared opportunities for storage and retrieval of data, encourages the reuse of components, and enables the rapid deployment of applications in response to changing business requirements. In Shelby County, a vast inventory of enterprise-wide and agency specific production applications reside on mainframe, sever, and desktop computer platforms. New applications and application enhancements are constantly being evaluated, developed, acquired, and implemented as “older” legacy applications retire. The goal of this deliverable will be to determine the industry standard application development tools and language environments that are appropriate for the long term needs of Shelby County Government, including a balance between Commercial-Off-The-Shelf (COTS) versus custom development. The architecture will address both production applications and office systems including email, Graphical Information System Applications (GIS), Web enabled systems and the programming and development tools used to support them. It will also consider the County’s document management and storage requirements from day-to-day ‘paperless office’ initiatives, office printing and electronic publishing strategy, and document archival needs.
- **Internet and Security Architecture:** Develop a plan to cost-effectively secure the County’s numerous data repositories and networks, while maximizing the potential cost savings and efficiency gains from Internet technologies such as online self-service eGovernment applications, email, and mobile devices.
- **Platform and Software Standards:** Standards are essential to sound cost controls in software licensing and maintenance, hardware, services, training, and integration. Having fewer platforms in use enables allocated resources to better support existing systems and enables more leverage in negotiating agreements. End user standards should include operating systems, word processing systems, spreadsheets, databases, email clients, document management systems, project management software, web browsers, and antivirus among others. End user hardware standards include platforms, maintenance, power, CPU, memory, monitor, operating system, interface cards, disk configuration, and media drive.  
  
Standards are also required for hand held mobile devices (Blackberry, etc.), software compatibility, and connectivity. Other critical areas for which standards must be set are general server standards, file/print/web servers, database/application servers, application development, network protocols, and cabling standards among others.

## Exclusions

*There are several significant issues that, although are a considerable risk to Shelby County, cannot be addressed within the cost constraints of this proposal. Those issues are:*

- Alternatives of how best to meet the current and future needs currently provided by JSS and/or Banner courts systems,
- Address the long-term viability of Jail/Corrections management systems such as JMS/IMS,
- Recommendation of a strategy to plan for the approaching retirement of a significant proportion of the information technology staff, with the associated risk of loss of the institutional knowledge of technologies and key business processes.

The AITC is very interested in presenting a proposal to address any or all of the above issues upon request by the County Commission.

## Timeline

### ***TIMELINE FOR DEVELOPMENT***

***Sept. 2008 – Oct. 2009***

<b>MANAGEMENT CONTROLS AND PROCESSES</b>	<b>Sept. 2008 - Mar. 2009</b>
<b>IT MANAGEMENT FRAMEWORK</b>	<b>Sept. 2008 - Mar. 2009</b>
<b>STRATEGIC PLANNING MODEL</b>	<b>Sept. 2008 - Mar. 2009</b>
<b>NETWORK ARCHITECTURE</b>	<b>Sept. 2008 - Mar. 2009</b>
<b>ENTERPRISE DATA COMMUNICATIONS NETWORK</b>	<b>Sept. 2008 - Mar. 2009</b>
<b>INSTITUTIONAL NETWORK</b>	<b>Sept. 2008 - Mar. 2009</b>
<b>VOICE COMMUNICATIONS NETWORK</b>	<b>Sept. 2008 - Mar. 2009</b>
<b>EMERGENCY COMMUNICATIONS NETWORK</b>	<b>Sept. 2008 - Mar. 2009</b>
<b>PHASE I RECOMMENDATIONS DELIVERED</b>	<b>MARCH 2009</b>
<b>APPLICATION &amp; DATA ARCHITECTURE</b>	<b>Apr. 2009 - Oct. 2009</b>
<b>THE APPLICATION TOOLS</b>	<b>Apr. 2009 - Oct. 2009</b>
<b>PLATFORM ARCHITECTURE</b>	<b>Apr. 2009 - Oct. 2009</b>
<b>THE PLATFORMS</b>	<b>Apr. 2009 - Oct. 2009</b>
<b>STORAGE AREA NETWORK</b>	<b>Apr. 2009 - Oct. 2009</b>
<b>INTERNET ARCHITECTURE (E-GOVERNMENT)</b>	<b>Apr. 2009 - Oct. 2009</b>
<b>SECURITY ARCHITECTURE</b>	<b>Apr. 2009 - Oct. 2009</b>
<b>STANDARDS</b>	<b>Apr. 2009 - Oct. 2009</b>
<b>PHASE II RECOMMENDATIONS DELIVERED</b>	<b>OCTOBER 2009</b>

## Appendix – Biographies

Presented below are the biographies of the principal consultants assigned to lead this engagement.

### **John Gnuschke, Ph.D.**

Dr. John E. Gnuschke is director of the Sparks Bureau of Business and Economic Research / Center for Manpower Studies and Professor of Economics at The University of Memphis.

Dr. Gnuschke received his Ph.D. and M.A. from the University of Missouri at Columbia and his B.S. from Utah State University. His areas of expertise include market assessments, survey research, impact studies, revenue and cost estimates, labor market studies, and competitor analyses.

As a widely recognized leader in his field, he serves on numerous local, state, and national committees and boards. He has served as president of AUBER (the national Association for University Business and Economic Research), and he works closely with community leaders and organizations throughout the Mid-South. In addition to his academic and contract research activities, Dr. Gnuschke has more than 30 years of experience as a private consultant to major business, legal, financial, and government organizations.

### **Dennis Wilson, Ph.D.**

Dr. Dennis R. Wilson is an Associate Research Professor for Economic Research / Strategic Business Technology at the Sparks Bureau of Business and Economic Research / Center for Manpower Studies. Dr. Wilson received his Ph.D. from the University of Memphis, his M.A. from the University of Akron and his B.A. from Youngstown State University. Dr. Wilson is a unique executive leveraging both practical business experience in information technology with a formal education in economics and finance. He is a versatile, bottom line focused results driven professional with over 30 years experience. Dennis is an effective planner and communicator who has held positions with proven results, achieved both cost savings, and cost avoidance in a wide range of industries from start up companies to multi-billion dollar public corporations.

Dr. Wilson's current projects for the Bureau include providing consulting support to the State of Tennessee Department of Labor Services relative to its reporting needs, consulting services to Shelby County regarding the development of IT service level agreements, and supporting the TCO project evaluation and opinion development process.

Prior to joining the Sparks Bureau, Dr. Wilson held the position of Chief Information Officer for a \$1.5bn, NASDAQ-listed healthcare organization. Dr. Wilson has also held the positions of Assistant V.P. of Information Systems for Guardsmark, Inc., various information technology related management positions at Federal Express and technical advisory positions at the Ohio Edison Company (First Energy).



**Patrick Ruckh, MBA, CIA**

Patrick Ruckh is an experienced executive with a broad background in data processing, financial management, and product development. Mr. Ruckh received his MBA from the University of Colorado and is a certified internal auditor. Mr. Ruckh's strengths include strategic planning, leadership abilities, and excellent oral and written communication skills.

Mr. Ruckh is currently serving as an Executive in Residence at the University of Memphis as well as providing consulting services to various businesses across the United States. Mr. Ruckh most recently served as executive vice president and CIO of First Horizon National Corp. His other past executive positions include senior vice president and manager at UMB Bank, senior vice president and manager at Bank of Hawaii, and vice president and manager of bank systems at First Interstate Bank of Denver. His past and present professional activities and awards include being named the most innovative CIO of the year (2006) by Bank Systems and Technology, serving as a board member of the Technology Council of Memphis, serving on the advisory board and guest lecturer for the University of Kansas, serving on the board of directors of MINIBANK, and serving as an IT advisor to the University of Memphis. Additionally, Mr. Ruckh is a certified executive coach.

**Richard. A. Pride, M.B.A.**

Richard is a customer focused information management executive with progressive experience providing business and technology leadership. He has an industry background in healthcare, pharmaceuticals and consumer products with global experience supporting all aspects of business. Richard is adept at mentoring teamwork, strategic thinking, managing risk, and leveraging strong interpersonal skills. Richard is a proven business leader who has developed, sold, and communicated business and IT strategy and plans and has led implementation and integration of global, cross functional systems and integration of numerous acquisitions.

Richard has held the positions of CIO Orthopaedics at Smith &Nephew PLC, VP of Systems and Management at Smith & Nephew, Inc., and VP and CIO at Maybelline. In addition, he has held various information technology management positions while at Bristol-Myers Squibb, Inc. Richard is Board President of the Society for Information Management (SIM), is on the Board of the American Red Cross, Executive in Residence at the University of Memphis and a member of the Council of Logistics Management (CLM).

**Simon J. Oliver, CISSP, GSLC, M.A.**

Simon Oliver is a *Certified Information Systems Security Professional* (including the specializations in Management and Architecture) and also holds the *SANS GIAC Security Leadership Certification* which focuses on security management and policy development and implementation.

With twenty-five year's professional IT experience, the past twelve have been concentrated on the Internet and data security fields, during which time Simon has founded innovative eCommerce and Data Security companies on two continents; been Technical Advisor to the award-winning FedEx.com site, and held the post of Information Security Officer and IT Infrastructure Director for a fast growing \$1.5bn, NASDAQ-listed healthcare company.

In addition to his data-security qualifications, Simon is a past chair of the Advisory Board for the SANS International GSLC certification, and holds Bachelors and Masters Degrees in Economics from the University of Cambridge, England. He is one of the authors of “The HTML 4.01 Programmers Reference Guide” (Wrox Press, 2001).

Mr. Oliver’s current projects for the Bureau include providing consulting support to the State of Tennessee Department of Labor Services relative to its reporting needs, consulting services to Shelby County regarding the development of IT service level agreements, and supporting the TCO project evaluation and opinion development process.

**Lee D. Miller, M.S.**

Lee Miller is a resourceful and results-oriented IT professional who combines over 39 years of in-depth knowledge of information technology and business processes to solve challenging business problems. Lee works effectively in team settings and is deeply committed to ensuring that business objectives are achieved with timely and cost-efficient results. Lee has held various technical management positions, he most recent being the enterprise technology manager at First Horizon National Corp., where he managed telecommunications services for corporate and remote facilities. Lee earned a M.S. in Telecommunications from Christian Brothers College, is a retired member of the Tennessee Air National Guard, serves as a Board member of the Southside Boys & Girls Club, and is Asst. Scoutmaster Troop 143.

**Timothy Wm. Regan, B.B.A.**

Mr. Regan is a graduate of Loyola University. Tim has more than thirty years experience in effectively recruiting, motivating, and managing multidiscipline information technology development and support teams for Federal Express Corporation, Schering-Plough Corporation, and Management Data Systems, Inc. Additionally, Mr. Regan has twelve years specialized experience in fraud investigations, first as a Federal Agent with the Office of Special Investigations, United States Air Force, and then in private practice with a regional Certified Public Accounting firm.

Mr. Regan is a results-oriented, advanced information technology senior manager skilled in all aspects of business operations with particular emphasis in effectively building, motivating, and directing cutting edge information technology development and support organizations. Tim has demonstrated success in leading these organizations to reach the highest level of productivity, quality and responsiveness. Mr. Regan is skilled in complex enterprise level project management, process improvement/re-engineering, data management and internal controls.

Mr. Regan has led a broad variety of development and technology teams ranging from front-end and database developers, system and business application analysts, and project managers to database and system administrators, network engineers, and technical consultants. Each team was assembled to meet the unique needs of a specific user organization: Accounting, Finance, Order Entry, Invoicing, Customer Service, Customs Clearance, Logistics Distribution Centers, Headquarters Administrative, Sales, Marketing, Pricing, and Purchasing. Periodically, these teams were recognized and rewarded by senior management for reaching the highest levels of productivity, quality and responsiveness. The most recently led team within FedEx Services

developed the company's first enterprise wide, fully web-enabled, Collaborative Knowledge Management applications; the company's first web-enabled Sales Process Management Tool; and the company's first extranet environment. Senior Executive Management recognized the teams' efforts and presented Tim with FedEx's highest leadership award, the FedEx 5-Star Award.

Mr. Regan's current projects for the Bureau include providing consulting services to Shelby County regarding the development of IT service level agreements, and supporting the TCO project evaluation and opinion development process.

### **Marc Johnson**

For twenty years, Mr. Johnson held various financial management positions during his career at Federal Express, including responsibility for the capital budgeting function and operational accounting for fixed assets (\$4+ Billion) and inventories. Mr. Johnson supervised a staff of 4 managers and 40+ professionals. He implemented inventory control systems that significantly reduced investment levels, increased cash flow via fixed asset policies, and reduced headcount through automation and restructuring. Mr. Johnson regularly reviewed financing strategy and major capital project proposals for Board of Director review.

As manager of Capital Controls & Reporting, Mr. Johnson had responsibility for the planning, authorization, controls and post audit functions of a capital budget that exceeded \$2 billion annually. The position entailed uniquely broad interaction with all levels of financial and operating management, including senior and executive.

As a Financial Projects Administrator, Mr. Johnson negotiated equipment, real property and aircraft financings. He held an important role in initiating and implementing innovative tax-oriented sale/leaseback financings and had frequent interaction with investment banking community, banks and leasing companies.

Mr. Johnson is currently the on-site administrator of the Technology Coordination Office for Shelby County.

### **Lee Grehan, Ed.D.**

Dr. Lee Grehan is a Research Associate Professor/Assistant Director of the Sparks Bureau of Business and Economic Research and received his Ed.D. in Higher and Adult Education from the University of Memphis. Dr. Grehan also holds dual Master's degrees in Public Administration with an emphasis in policy evaluation and independent studies with an emphasis in manpower economics. His academic research has focused on Tennessee community colleges, specifically in the areas of outcome measurement and economic and community development.

Dr. Grehan's current research efforts focus on economic policy and program evaluation, labor market analysis, and workforce development and training. As a manager, Dr. Grehan focused on the analysis of labor force preparedness needs and the development of education and training programs to assist workforce transitions. Dr. Grehan currently participates in the statewide evaluation of programs funded under the federal Workforce Investment Act and acts as a technical advisor to the State of Tennessee on data management.

